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10/584,687

04/19/2007

Claes-Goran Johansson

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EXAMINER

HAVAN, HUNG T

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,687	<b>Applicant(s)</b> JOHANSSON ET AL.	
	<b>Examiner</b> HUNG HAVAN	<b>Art Unit</b> 2128	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04/19/2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/19/2007</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Claims 1-10 are pending in Instant Application.

#### ***Priority***

2. Examiner acknowledges Applicant's claim to priority benefits of PCT/SE04/01898 filed 12/16/2004.

#### ***Information Disclosure Statement***

3. The information disclosure statement(s) (IDS) submitted on 04/19/2007 is/are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) is/are being considered by the examiner.

#### ***Claim Objections***

4. Claim 6 and 7 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.
5. Claim 8, 9, and 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.
6. Claims 8, 9, and 10 are objected because they do not follow standard US claim construction. An example of such a situation is claim 8 which recites "The use of the method accords to claim 1". Specifically, it is unclear as to where the preamble ends and the body of the claim begins.

***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claim 8-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim is directed to software per se. Therefore, the claim is directed to a non-statutory subject matter (see MPEP 2106.01).

As per claim 8, the instant claim recites "[t]he use of the method according to claim 1". The use of a method is not a proper process claim since there are no preamble and no discernable steps. The statutory classification cannot be determined as to whether the claim is a process, article of manufacture, apparatus or composition of matter. Therefore, the claim is non-statutory.

As per claim 9, the instant claim is directed to a computer program stored on a media and depends on process claim 1. However, the process of claim 1 does not produce the claimed product such as a program and media and therefore the instant claim is not a proper product-by-process claim. The statutory classification cannot be determined as to whether the claim is a process, article of manufacture, apparatus or composition of matter. Therefore, the claim is non-statutory.

As per claims 10, the instant claim is directed to an "elongated exhaust system" and depends on process claim 1. However, the process of claim 1 does not produce the claimed product such as an elongated exhaust system and therefore the instant claim is

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not a proper product-by-process claim. The statutory classification cannot be determined as to whether the claim is a process, article of manufacture, apparatus, or composition of matter. Therefore, the claim is non-statutory.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being **indefinite** for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 1-7, 9, and 10, numeric values within parentheses appear throughout the claim. For example, claim 1 recites, "exhaust system (1)" and "a ship (2)". It is unclear how the numeric values should be interpreted. In another example, claim 1 recites "adding (7) to a model of the exhaust system". It is unclear whether "(7)" is a label for the adding step or seven should be added to a model of the exhaust system. For purposes of examination, the numbers will be construed as labels because they appear to correspond to drawing items.

Regarding claim 1 and 4, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

In the phrase "sufficient attenuation is achieved", the term "sufficient" in claim 1 is a relative term which renders the claim indefinite. The term "sufficient" is not defined by

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the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For example, what level of attenuation is “sufficient”?

The term "desired" in claim 1 is a relative term which renders the claim indefinite. The term "desired" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For example, what noise level is "desired"?

As per claim 1, the instant claim recites "plurality of real-world elements" which is indefinite. It is unclear what constitute “real-world elements”.

The phrase “such that *it*” is indefinite. It is unclear to what “it” refers.

As per claim 8, the instant claim recites “The use of the method according to claim 1” which is indefinite. The user of the method according to claim 1 is not considered a claim as a whole. The metes and bounds of the claim cannot be determined. For example, where and how are the method of claim 1 used?

As per claim 9, a “computer program ... capable of executing any of the steps according to claim 1” is indefinite. The metes and bounds of the claim cannot be determined. The claim may be construed as a product by process claim; however, the executing of any of the steps of claim 1 does not produce the claimed computer program. On other hand, if the claim is construed as a process claim, then it does not further limit the parent claim 1.

As per claim 10, a “elongated exhaust system ... according the method of claim 1” is

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indefinite. The metes and bounds of the claim cannot be determined. The claim may be construed as a product by process claim, however the steps of claim 1 does not produce the claimed simulation tool. On other hand, if the claim is construed as a process claim, then it does not further limit the parent claim 1.

9. The above cited rejections are merely exemplary.

10. The Applicant(s) are respectfully requested to correct all similar errors.

11. Claims not specifically mentioned are rejected by virtue of their dependency.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over “A

***Study of the Noise From Diesel Engines Using the Independent Component***

***Analysis” by Li et al (hereinafter as Li et al) in view of Johansson et al (US Pat.***

***No. 6,167984 B1).***

***Li et al discloses:*** Claim 1. A method for supplying a system for sound attenuation of noise relating to an exhaust system (1) of exhaust gases from a high power combustion

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engine (4), such as the exhaust system (1) at a ship (2) or power plant, characterized in that the method comprises the steps of:

adding (7) to a model of the exhaust system, by means of a computing device (13) **(i.e. page 1172, § 4. Numerical Study, ¶ 2 of section, lines 1-2, teaches simulated source signal which necessitate a computing device)**, a plurality of elements (20a, 20b) **(i.e. Fig. 2 and page 1167, § 2.2. The Intake and Exhaust Noise, ¶ 1, lines 1-2, teaches intake and exhaust systems can be modeled using the pressure source as shown in Fig. 2)** where each element comprises a first reactive part (21), a resistive part (22) and a second reactive part (23);

inserting (8) into the model, by means of the computing device (13) **(i.e. page 1172, § 4. Numerical Study, ¶ 2 of section, lines 1-2, teaches simulated source signal which necessitate a computing device)**, at least one single attenuating device (44, 45) **(i.e. page 1167, § 2.2. The Intake and Exhaust Noise, ¶ 2, line 3, teaches acoustical load (muffler).);**

calculating (9), by means of the computing device (13) **(i.e. page 1172, § 4. Numerical Study, ¶ 2 of section, lines 1-2, teaches simulated source signal which necessitate a computing device)**, an attenuating effect of the elements (20a, 20b) and an attenuating effect of the at least one single attenuating device (44, 45) relating to a sound pressure level of the high power combustion engine (4) **(i.e. page 1175, § 5.1 Engine Noise Characteristics, ¶ 4 of section, lines 1-6, teaches comparison result of the normalized kurtosis between the simulated Gaussian distributions and the measure acoustic signals.);**



repeating (10) the inserting and calculating step, until sufficient attenuation is achieved (**i.e. page 1175, § 5.1 Engine Noise Characteristics, ¶ 4 of section, lines 1-7, teaches the acoustic signals are measured from the test engine under different speed and load conditions with a total of 160 measurements.**);

assembling (11) the system for sound attenuation, such that it comprises a plurality of real-world elements and at least one real-world single attenuating device mounted as channel parts along the exhaust system, wherein a measured noise level at the close vicinity of the outlet is below a desired noise level.

Li et al does not expressly disclose where each element comprises a first reactive part (21), a resistive part (22) and a second reactive part (23); and assembling the system for sound attenuation, such that it comprises a plurality of real-world elements and at least one real-world single attenuating device mounted as channel parts along the exhaust system, wherein a measured noise level at the close vicinity of the outlet is below a desired noise level.

Johansson et al, however, discloses

where each element comprises a first reactive part (21), a resistive part (22) and a second reactive part (23) (**Fig. 1 and col. 5, lines 23-24**); and

assembling (11) the system for sound attenuation, such that it comprises a plurality of real-world elements and at least one real-world single attenuating device mounted as channel parts along the exhaust system (**Fig. 1**), wherein a measured noise level at the close vicinity of the outlet is below a desired noise level (**col. 1, lines 12-14**,

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**teaches the noise generated from the outlet of the exhaust system is to fulfill certain predetermined requirements with respect to sound).**

Li et al and Johansson et al are analogous art because they are from similar field of endeavor of sound reduction in a transport system. At the time of the invention it would have been obvious to person of ordinary skill in the art to utilize the attributes of the transport system for gas composed of resistive and reactive attenuators discussed by Johansson et al in the independent component analysis model discussed by Li et al for the purpose of producing a transport system for gas from which the sound emission is less than from conventionally known systems (**Johansson et al: col. 3, lines 35-37**).

***Li et al discloses:*** Claim 2. A method according to claim 1 characterized in that a contribution to an estimated attenuated effect comprises a band of frequencies corresponding to intermediate frequencies (60) of an element (20) (**i.e. page 1167, § 2.1 The combustion and Mechanical Induced Noise, ¶ 5 of section, lines 1-7**).

***Li et al discloses:*** 3. A method according to claim 2 characterized in that the contribution to the estimated attenuated effect from intermediate frequencies of an element (20) are calculated by use of four-pole theory and by use of power flow models (**Fig. 2 and page 1168, § 2.2. The Intake and Exhaust Noise, ¶ 2, lines 4-5, teaches four-pole coefficients A, B, C and D represent the transfer characteristics of the muffler**).

***Johansson et al discloses:*** 4. A method according to claim 1 or 3 characterized in that the at least one single reactive attenuating device (45) is positioned at an odd number of a quarter of a wavelength from a distinct impedance, such as an area increase (46),

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where the wavelength is the single attenuating device's tuned frequency (**i.e. col. 6, lines 15-27, teaches quarter-wave attenuator**).

***Li et al discloses:*** 5. A method according to claim 4 with the additional step of calculating a pressure drop along the exhaust system (1) (**i.e. § 2.2. The Intake and Exhaust Noise, ¶ 3, lines 1-4, teaches propagation of the source pressure can be calculated**).  
**above).**

### ***Conclusion***

13. All claims are rejected.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Havan whose telephone number is (571) 270-7864. The examiner can normally be reached on Monday thru Friday, 9am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the

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Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kamini S Shah/

Supervisory Patent Examiner, Art Unit 2128

/HUNG HAVAN/

Examiner, Art Unit 2128